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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,374	12/09/2003	Marc Schaepkens	RD-28,484-2	4417

6147 7590 09/11/2006

GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER	
TUROCY, DAVID P	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/731,374	SCHAEPKENS, MARC	
	Examiner	Art Unit	
	David Turocy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35-49* is/are pending in the application.

4a) Of the above claim(s) *49* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7/26/2006 have been fully considered but they are not persuasive.

The applicant has argued against the Examiners use of reactant gas in the previous office action because such a gas is used to form a plasma and therefore should not be equated to the term reactant gas used by the applicant. It is well settled that arguments of counsel unsupported by competent factual evidence of record are entitled to little weight. *In re Payne, 606 F.2d 303,315,* 203 USPQ 245,256 (CCPA 1979). During patent examination, the pending claims must be "given the broadest reasonable interpretation consistent with the specification" by giving words their plain meaning unless the specification provides a clear definition. See *In re Prater* 415 F.2d 1393 1404-05 162 USPQ 541 and *In re Zletz* 893 F.2d 319, 321, 13 USPQ2d 1320.

It appears as though the applicants are narrowly interpreting the term "reactant gas" in the claim, however, the claim encompasses a broader scope of subject matter then the applicants narrow interpretation, such as an oxygen gas as taught by Sakata and Fukuhara.

The applicants have argued against the Sakata reference, stating the reference fails to explicitly state that the oxygen is flowed into an already formed plasma, where Sakata only discloses supplying oxygen and inert gas at a flow rate of 10-300 ml/min. While Sakata does not explicitly state that the oxygen is flowed into an already formed plasma, as addressed by the applicant, the flow rate of oxygen is 10-300 ml/min.

Therefore, once a plasma is formed, the oxygen continues to flow into an already formed plasma, as required by the claim.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fukuhara to use the oxygen/inert gas plasma as suggested by Sakata to provide a desirable adhesivity for a subsequent film layer because Sakata discloses supplying oxygen and inert gas into a plasma provides a modified layer is known in the art to provide a deposited surface layer which improves film adhesion to plastic and therefore would reasonably be expected to effectively provide pretreatment of a automobile part in the process of Fukuhara.

The examiner notes the applicant's request to address the provisional obvious double patenting rejection upon finding of patentable subject matter, since the claim subject matter is still pending the provisional obvious double patenting rejection will be maintained till such a time.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 62253634 by Fukuhara et al., hereafter Fukuhara in view of JP Patent 58138735 by Sakata, hereafter Sakata.

Fukuhara, teaching of a method of uniformly treating a non-planar substrate, for example automotive parts, using a plasma, discloses supplying a reactant gas through a control valve to a plurality of shower head injectors and then subsequently reacted to form a plasma (abstract). Fukuhara discloses independently controlling the flow rate to each of the reactant gas injectors depending on configuration of the substrate relative to the plasma position, thereby making the gas flow rate per unit area uniform therefore providing homogeneous plasma processing over the entire substrate surface (abstract, Page 3, Translation). Fukuhara discloses providing an array of plasma sources, rather then a single source, allows for plasma processing of substrates with areas difficult to treat (Page 2). Fukuhara discloses plasma treating the plastic substrate prior to coating, but fails to disclose injecting the reactant gas into plasma and reacting the reactant gas with each of the plasma to form a coating.

However, Sakata discloses treating plastic parts using a plasma, discloses subjecting the substrate to a plasma comprising inert gas and oxygen to form a modified layer on the substrate provides the substrate with high adhesively to a subsequent film deposition (abstract). The reactant gas, in this case oxygen, is injected into the formed plasma and the reactant gas and plasma flow towards the substrate surface.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fukuhara to use the oxygen/inert gas plasma as suggested by Sakata to provide a desirable adhesivity for a subsequent film layer because Sakata discloses supplying oxygen and inert gas into a plasma provides a modified layer is known in the art to provide a deposited surface layer which improves film adhesion to plastic and therefore would reasonably be expected to effectively provide pretreatment of a automobile part in the process of Fukuhara.

4. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara in view Sakata and further in view of US Patent 4871580 by Schram et al., hereafter Schram.

Fukuhara in view Sakata teaches all the limitations of these claims as discussed in the 35 USC 103(a) rejection above, however, they fail to teach of using at least one expanding thermal plasma source.

However, Schram teaches of a method of treating a surface with plasma discloses providing plasma with separate sections for generating plasma and substrate treatment by expanding a thermal plasma, including a reactant gas of oxygen and a inert gas, into the deposition chamber (figures, Column 1, line 55, Column 4, lines 65-Column 5, line 38). Schram discloses the plasma source has a cathode, an anode, and a non-reactive plasma source gas disposed in a plasma chamber (Figures). Schram discloses such an plasma is not limited to the disadvantages associated with standard

plasma systems (Column 1,line 40 -Column 2, line 32). In addition Schram discloses the effiecency of the plasma process is greatly strength using the expanding plasma (Column 7, lines 30-33)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fukuhara in view Sakata to use the expanding plasma as suggested by Schram, with a reasonable expectation of success, to reap the benefits of increase plasma efficiency during substrate processing.

5. Claims 38-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara in view Sakata and further in view of Japanese Patent Abstract 63187619 by Mochizuki, hereafter Mochizuki.

Fukuhara in view Sakata fails to disclose passing the reagents to a reagent gas injector, which directs the reagents through a plurality of orifices into each of the plurality of plasmas.

However, Muchizuki teaches a plasma process system including a gas distribution plate comprising a plurality of orifices (abstract). Muchizuki discloses in Fig 1b, the orifices are provided with less in the central region of the substrate and more orifices in the peripheral region (abstract). In another embodiment, the gas distribution plate is provided with smaller holes in the central region and larger holes in the peripheral region, where the larger holes inherently have a different conductance then the smaller holes (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fukuhara in view Sakata to implement the gas distribution injector arrangement as taught by Muchizuki in order to form a homogeneous film over the surface of the substrate with a reasonable expectation of success.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 35-48 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 32-43 of copending Application No. 10/626253 in view of Fukuhara. Claims 32-43 of the copending application teach all the limitations set forth by claims 35-48 of the present invention, except teaching of controlling gas flow rates to each of the plurality of plasmas to coating a non-planar substrate. However, Fukuhara, as discussed above, teaches of controlling the reactant gas flow rates during plasma coating to uniformly

coat a non-planar substrate. Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to modify the copending application to control the flow rates of the reactants, resulting in varying flow rates of reactants, to provide a desirable uniform coating on a non-planar substrate. Such a modification to claims 32-43 of the copending application would have been obvious to one ordinary in the art and thus claims 35-48 of the present invention is obvious variants to the copending claims.

This is a provisional obviousness-type double patenting rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy
AU 1762

BRET CHEN
PRIMARY EXAMINER